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ANTI-SEMITISM, STRESS AND AGGRESSIVE
CUE VALUE OF THE STIMULUS TARGET

by

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A THESIS

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Anti-Semitism, Stress and Aggressive Cue Value of the Stimulus Target", submitted by Donald George Fischer in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

Abstract

The importance of internal and external factors in the elicitation of aggression was investigated by varying (a) prejudice, (b) stress, and (c) aggressive-cue value of the stimulus target. Subjects were selected on the basis of their scores on a ten item anti-semitism and a twenty-eight item F scale questionnaire. Ninety-six subjects were run in twenty four groups of four each. The groups were homogeneous with respect to sex and anti-semitism. Stress was induced by giving each subject two unfavorable evaluations of himself, one ostensibly from a peer, and the other from the experimenter. Favorable and unfavorable paragraphs were used to manipulate the stimulus targets' aggressive cue value.

In the experimental situation each subject was seated in a cubicle, subjected to stress, labelled as a high or low aggressive cue value target and then asked to evaluate one other person (stranger) in the group. These evaluations were utilized as measures of hostility displacement or aggression. Hostility scores were analysed by analysis of variance. There were three levels of prejudice, two levels of stress, and two levels of aggressive cue value of the stimulus target forming a $3 \times 2 \times 2$ factorial design. Concomitant autonomic activity was monitored by recording heart rate throughout the experimental session. Change in heart rate was determined by comparing the number of heart beats within a fifteen second interval prior to and immediately following particular experimental events. Data consisted of pre- and post-event total scores



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which were analysed using a 3 x 2 x 2 x 2 split-plot design. Data indicated the following results:

1. Less friendly evaluations were given by high prejudiced persons than by moderate or low prejudiced persons;
2. Less friendliness was expressed toward a person having a high aggressive cue value than one having a low aggressive cue value;
3. Moderately prejudiced persons, following stress, discriminated significantly between targets of high and low aggressive cue value, whereas high and low prejudiced persons did not;
4. Post-stress heart rate, for the stress groups relative to the non-stress groups, decreased for the high and low prejudiced persons whereas it increased for the moderately prejudiced persons;
5. Overall heart rate decreased significantly following subject's evaluation of other people;
6. A significant interaction indicated that the heart rate following evaluation of other people decreased significantly more for the stress groups than the non stress groups.

Results supported Berkowitz' theoretical notion that aggression is elicited by external cues.

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Introduction

It is often implied, if not stated explicitly, in the psychological literature, that behavior is a function of both internal and external factors, $B=f(P,E)$. In the area of aggression, which is the concern in this thesis, the prime emphasis has been on such concepts as habits, instincts, and response tendencies. Berkowitz (1962, 1964, 1965a) was among the first authors to emphasize the importance of external cues in determining aggression. Studies conducted under his supervision have shown that the aggressive cue value of the target of aggression is an extremely important variable. The present thesis was concerned with extending this formulation. The particular focus was on the role of external cues in eliciting aggressive behavior from high, moderate, and low prejudiced subjects assigned to low and high frustration conditions.

This thesis begins with a discussion of prejudice as it relates to the frustration-aggression hypothesis, the scapegoat hypothesis and the authoritarian personality. These topics reflect an emphasis on the internal factors in the formulation stated above, $B=f(P,E)$. It then proceeds to focus on the external factors, with emphasis on the eliciting-cue hypothesis. Finally, a manipulative study, supporting the importance of external factors in eliciting aggression is presented.

The Frustration-Aggression Hypothesis

The notion that frustration leads to aggression had its origin with Freud. It was later formulated and investigated by Dollard, Doob,

Miller, Mowrer-Sears culminating in the publication of the book, Frustration and Aggression (1939).

The formulation of this hypothesis was an attempt to relate ".....such diverse phenomena as strikes and suicides, race prejudice and reformism, sibling jealousy and lynching, satirical humor and criminality, street fights and the reading of detective stories, wife-beating and war" (P.26). The hypothesis was based on the assumption that aggression was inevitably a consequence of frustration. Specifically, the hypothesis stated "...that the occurrence of aggressive behavior always presupposes the existence of frustration and, contrariwise, the existence of frustration always leads to some form of aggression" (P.1).

The authors pointed to many forms of common day-to-day experience as obvious support for the first part of their proposition, the view that aggressive behavior was traceable to and thus produced by some form of frustration. Confirmation of the second half of their proposition, that whenever frustration occurs aggression will inevitably result, however, was not at all obvious. Indeed, several exceptions were noted, as in the case of persons reacting to frustration with increased productivity. To deal with this difficulty the authors suggested that, as a result of socialization one learns to suppress and restrain overt aggressive reactions which then become manifested in disguised, displaced forms of aggression. The assumption of the inevitability of aggression following frustration was the

key to linking the afore-mentioned isolated social phenomena; these could now be interpreted as different forms of displaced aggression resulting from frustration.

Clearly, this theoretical formulation was very much dependent upon the formal definitions of frustration and aggression. Frustration was defined as "an interference with the occurrence of an instigated goal-response at its proper time in the behavior sequence" (P.7). Aggression was defined as "any sequence of behavior, the goal-response to which is the injury of the person toward whom it is directed," (P.9). Also, to permit a more accurate prediction of the nature of the aggressive response resulting from frustration, additional psychological factors were postulated. The basic hypothesis was, therefore, elaborated to include such factors as those influencing the strength of the instigation to aggression; those influencing the degree of inhibition of aggression; and those influencing the direction of aggression.

With regard to the first factor, it was proposed that the strength of the instigation to aggression varied directly with the amount of frustration. Variation in the amount of frustration was a function of "... (1) the strength of the instigation to the frustrated response; (2) the degree of interference with the frustrated response; and (3) the number of response sequences frustrated" (pp.28-32). With respect to the second factor, it was proposed that inhibition of aggressive behavior varied directly with the strength of the anticipated punishment. Regarding factors

presumed to influence the direction of aggression, it was proposed that the source of frustration aroused the strongest intense aggression, and progressively less direct sources aroused progressively less intense aggression. Moreover, the inhibition of aggression against the source of frustration acted as an additional frustration which increased the instigation to subsequently displaced aggression. The occurrence of aggression was assumed "...to reduce the instigation to further aggression" (p.50). This was called the catharsis effect.

In brief, for these authors, life was conceived of as consisting of a series of frustrations and consequent aggressions. In childhood, frustration was a constant feature of the socialization process. In adulthood, frustration resulted from physical nature of man, from managing the material world and from inhibitions imposed by society. The most satisfactory relief from frustration was through direct aggression against the frustrating source, but where this was not possible relief was frequently sought through aggression against members of the "outgroup", as for example in racial prejudice. It is this displaced form of aggression which is of direct concern in the present thesis.

The task undertaken by the authors of the F-A hypothesis was an extremely difficult one, and since its publication in 1939, it has been the target of many controversies and criticisms. The major criticisms may be summarized under three general topics: (1) those related to the hypothesized one-to-one relationship between frustration and aggression; (2) those related to the

proposition, i.e. that all aggression presupposes the existence of frustration; and (3) those related to the proposition, i.e. that frustration always leads to aggression.

Many experimenters investigating frustration and consequent aggression did not obtain results consistent with the predicted one-to-one relationship between frustration and aggression (Yarrow, 1948; Jegard and Walters, 1960; Mussen and Rutherford, 1961; Walters and Brown, 1963; Buss, 1963, 1966). Buss (1963, 1966) has presented rather convincing evidence that frustration, as defined by Dollard et al, is not related to aggression in a one-to-one fashion. In the first of these studies, Buss (1963) employed three different levels of frustration. Results indicated no significant differences in the intensity of aggression as a function of frustration; and that all three levels of frustration lead to only minimal, although significant, aggression in comparison to a control condition. Buss (1966) studied physical aggression with regard to five variables: (1) intensity of frustration; (2) instrumental value of the aggression in overcoming the frustration; (3) feed-back pain cues from the victim; (4) sex of the experimenter; and (5) sex of the victim. Results indicated that frustration did not lead to more aggression than a control condition. In fact, frustration was the only variable that did not affect aggression.

Not all aggression is the result of frustration. Aggression may result from direct learning (Buss, 1961); or indirect learning, as in the case of imitation (Bandura and Walters, 1963); or

aggression may be instrumental in the attainment of non aggressive goals (Berkowitz, 1962). Buss (1961) suggested that aggressive behavior may predominate as a consequence of having been reinforced in the past, and not because it was instigated by an immediate frustration. He also emphasized that neither attacks nor annoyers constitutes a frustration, according to the original definition, yet both clearly lead to aggression. As well as reinforcement being important in increasing the likelihood of the expression of aggressive responses, it may be important in inhibiting the expression of aggressive responses in certain situations. Berkowitz (1962) suggested that non aggressive response tendencies, for example guilt, anxiety, fear, may be learned to certain situations, and these will interfere with the expression of aggression. It was also pointed out that Dollard et al neglected the importance of cognitive factors in the interpretation of frustrating situations and the consequent response to them.

In addition Berkowitz (1962) has suggested that aggression may be learned as a means of attaining non aggressive goals. To use his example, airmen participate in bombing raids and aggress against innocent civilian victims without having been frustrated or angered. In such cases aggression is instrumental in obtaining non aggressive goals, and does not appear to have frustration as an antecedent.

That aggression may be learned through direct training has been demonstrated by Davitz (in Bandura & Walters, 1963, pp. 135-136). Children were pre-trained to respond either in a competitive, aggressive manner or constructive, co-operative manner to frustration. Experimental results indicated that those children who had been trained to respond aggressively did in fact behave more aggressive and less constructive to frustration than those who had been trained to respond constructively.

Aggression may be learned indirectly through imitation of aggressive models; this response can then occur as part of an S-S sequence without the existence of frustration (Bandura & Walters, 1963). That imitation learning occurs has been well documented; details may be obtained from Bandura & Walters (1963, pp. 67-89).

Frustration does not always lead to aggression. Berkowitz, (1962) reviewing the literature, concluded "that frustration may cause a person to engage in a variety of behaviors" (pp. 23-29). Paraphrasing, a person might change his goals to those preferred at an earlier stage of life; he might change his method of achieving his present goals, i.e. become more immature; he may exhibit fixation, which would result in no change in behavior; he may express fear, pain or avoidance; or he might respond with an increased effort to solve the frustrating problem. Miller (1941) one of the original authors of the F-A hypothesis, later admitted that not all frustration leads to aggression, although he still held to the view that aggression always presupposes frustration.

Other authors have emphasized the variety of methods used to manipulate frustration "...barriers, failure, distractors, conflict, omission of reward" and question the assumption that such diverse procedures "...all lead to the same class of responses--aggression" (Buss, 1961, p.19). Buss also suggested that merely to list frustration as an antecedent of aggression is not enough; it is necessary also, "...to specify the kind of frustration, to indicate in which segment of the behavioral sequence it occurs...." i.e. during the instrumental response, the presentation of the reinforcer, or during the consumatory response, ...and to indicate the conditions under which it occurs" (pp.19-20).

Others authors have questioned the motive force behind aggressive behavior. "...where does the aggressive energy come from?" (Berkowitz, 1962, p.32). Anger as an intermediate variable was not mentioned in the original formulation of the F-A hypothesis. With no source identified it may be assumed to be instinctive; and this is not a satisfactory explanation, as many have argued (Berkowitz, 1962; Buss, 1961; Tinbergen, 1962).

In summary, the F-A hypothesis has led to a tremendous amount of research, and in this sense has been widely influential, but as is argued in this paper, frustration leads to aggression only if the appropriate cues exist in the environment. Such a position severely limits the usefulness of the F-A hypothesis as an explanation of aggressive behavior. Relevant research is discussed in the next section in the context of scapegoat theory.

The Scapegoat Hypothesis

The scapegoat hypothesis applied the F-A notion to prejudiced behavior. Prejudice is defined as an unfavorable attitude toward individuals on the basis of their group membership. Scapegoating refers to the displacement of aggression from the original target to one less able to retaliate; one who is often completely innocent of the circumstances surrounding the frustrating incident -- a scapegoat. The young frustrated executive unjustly criticizing his wife's preparation of the dinner meal is an example. Outgroups such as Negroes and Jews are easy targets for displaced aggression.

Prejudice is justified by blaming the scapegoat group for the frustrations, "The Jews are responsible for the deplorable state of our economic affairs". Undesirable characteristics of the prejudiced person are denied and projected onto the scapegoat group, "Negroes are ignorant, stupid and immoral". Finally, the scapegoat acquires a stereotyped personality, which is ostensibly shared by all members of the group, "Negroes are dirty, lazy and categorically different from non-Negroes".

The scapegoat hypothesis has a strong common-sense appeal since most people remember instances of their own behavior in which aggression was displaced from the powerful source of frustration onto a less powerful substitute victim. However, common sense is not a criterion for accepting or rejecting hypotheses; rather it is the meticulous determination of the balance of evidence.

The following is a review of this evidence.

Early investigations provided only equivocal evidence for the scapegoat theory of prejudice. Studies supporting the theory have shown that economic hardships in the South, prior to the 1930s, were associated with the number of Negroes lynched in that area (Hovland & Sears, 1940); that economically backward Southern areas voted more heavily for politicians advocating hostility toward Negroes than did the more prosperous Southern areas (Pettigrew & Cramer, 1959); and that the number of favorable traits assigned to Mexicans and Japanese decreased significantly following frustration (Miller & Bugelski, 1948).

Studies refuting scapegoat theory have shown that frustration caused by conditions during World War II did not produce an increase in aggression displaced onto conscientious objectors, as scapegoat theory predicts (Crespi, 1945); that there was no difference between high and low prejudiced groups in the amount of TAT aggression following frustration (Lindzey, 1950); and that frustration produced no increase in prejudice in experimental subjects, as measured by scale ratings of attitudes toward ingroups and outgroups (Stagner & Congdon, 1955).

More recent studies with regard to personality differences in readiness to exhibit prejudiced behavior, have generally supported the view that those who score high on the A-S scale are more likely to displace aggression than those who score near the median, following frustration (Cowen, Landes & Schaet, 1959; Weatherley, 1956; Berkowitz, 1959, 1960, 1961; Epstein, 1965; Dillehay, 1965; Rule, 1966; Fischer &

Rule, 1967). These lend partial support to scapegoat theory.

Perhaps the major deficiency in this theory is that it does not adequately specify the target of aggression (Zawadski, 1948; Allport, 1954; Buss, 1961; Berkowitz, 1962). Scapegoating involves the displacement of aggression from the original source of frustration to a substitute source, an outgroup; the precise target is not specified. Although the precise nature of the target is not specified, the authors of the theory imply that the target will be (1) an innocent victim, and (2) the safest available target. Critics rightly point out that this is not necessarily so; indeed aggression may not be displaced at all (Allport, 1954, P. 350) because the self, or the source of frustration may be the target of aggression. The safest available target is not always the recipient of displaced aggression (Allport, 1954, P. 351); individuals, or majority groups may become scapegoat targets. For example, Negroes can be prejudiced against Whites; Jews may be prejudiced against Gentiles.

In summary, scapegoat theory, as originally formulated, was incomplete. Further details were required to handle the apparent exceptions. In this regard research has been guided by two major hypotheses: (1) that there are reliable individual differences in readiness to exhibit scapegoating behavior, and (2) that certain targets are more likely to be the recipients of displaced aggression than others. The former hypothesis leads to a discussion of the Authoritarian personality (Adorno et al, 1950);

the latter to the eliciting-cue hypothesis (Berkowitz, 1965).

The Authoritarian Personality

The development and investigation of the authoritarian personality was an attempt to discover personality differences in readiness to exhibit prejudiced behavior. The authors, Adorno, Frenkel-Brunswik, Levinson and Sanford, began with a study of anti-Semitic ideology. The anti-Semitism scale evolved from the investigation of beliefs about Jews. It contained five subscales dealing with Jewish "offensiveness", "threatening" character, "seclusiveness", "intrusiveness", and the desirability of discriminations as a means of solving the Jewish problem.

They next studied ethnocentric ideology to determine whether anti-Semitism could be subsumed under a more general attitude of rejection of minority groups. To do this, they constructed an ethnocentrism scale comprising three subscales: Negro subscale, minority subscale, and patriotism subscale. The Negro subscale measured attitudes towards Negroes and Negro-White relations; the minority subscale measured attitudes towards American minority groups other than Negroes and Jews; and the patriotism subscale measured attitudes towards international relations with other nations as out-groups and America as the in-group.

The authors were next interested in the relationship between attitudes toward religion, politics, economics and ethnocentrism.

Out of this emerged the political-and economic-conservatism scale. It was assumed that political, economic and religious forces are extremely important in the development of ethnocentrism. Here the authors were looking for some broad organization of ideological pattern.

Finally, in an attempt to measure prejudice indirectly, the authors developed the F-scale, so called because presumably it measures the predisposition to fascism (see Appendix C for these items). Items which did not mention minority groups or political-economic issues were formulated around "...such topics as the self, family, sex, interpersonal relations, moral and personal values," (p.222).

The theory underlying the concept of the authoritarian personality has been summarized by Deutsch & Krauss (1965)

...the "authoritarian personality" is produced by parents who use harsh and rigid forms of discipline on the child, who make their love and approval conditional on unquestioning obedience from the child, who emphasize duties and obligations rather than the exchange of affection in family relations, who are overly conscious of distinctions of status in their interpersonal relations and are contemptuous or exploitive towards those of lower status. As a result of being forced to submit to harsh, arbitrary parental authority, the child develops hostility which is too dangerous to express toward the frustrating but feared parents. Having submitted, he also develops a view of himself that makes him feel more dependent on his parents, and thus less able to defy or even question them.

The child's need to repress rigidly all hostility toward the parents leads to an identification with authority and an idealization of it, with a concomitant displacement of the hostility onto out-groups, who are usually of lower status. Accompanying the displacement of his hostilities is a projection onto out-groups of those of the authoritarian's

own impulses which were frustrated and repressed because of their unacceptability within his family. The fear of his own impulses and the need to repress them rigidly leads to a rigid personality organization, to stereotyped thinking, to an avoidance of introspective awareness, and to a moralistic condemnation and punitive attitude toward unconventional values and practices. Personal relations are perceived in terms of power and status; "strength" and "toughness" are idealized, whereas "weakness" and "tenderness" are associated with each other and viewed with contempt (pp. 159-160).

In brief, authoritarian discipline produces repression of undesirable faults and shortcomings, and especially of aggression against authority. These repressed faults and shortcomings are preprojected onto out-groups, who are then acceptable targets for the repressed aggression; aggression against authority is thus displaced onto out-groups. The repressed faults and shortcomings lead to negative stereotyped attitudes (prejudice) which justify the displaced aggression.

Important criticisms have been directed toward the methodology of "the authoritarian personality" (Christie & Jahoda, 1954). The major criticisms have been outlined by Deutsch & Krauss (1965, p. 162-163). They are paraphrased in the following. First, the data collected to test the theory were not gathered under properly controlled conditions. For example, interview data were gathered to corroborate attitude scale data yet interviewers had access to the scale scores of the subjects before the interview; this undoubtedly biased the interview data.

Second, authoritarianism has been shown to be negatively correlated with education, therefore, much of the obtained personality difference may reflect differences associated with education and social class. Third, the theory is too content bound, and since oriented toward the political right thus neglecting non-Fascist authoritarians. Also, psychoanalytic theory, which is the personality theory underlying the authoritarian personality, says nothing about a relationship between personality structure and content of ideology. Fourth, there is a neglect of the prevailing attitudes, in the assumption that anti-Semitism, ethnocentrism, and authoritarianism are linked together by a particular personality structure. Fifth, the authors commit the fallacy of believing that the prejudiced are usually authoritarian because their empirical results indicate that authoritarians are often prejudiced. Finally, the attitude questionnaires are subject to acquiescent response sets, although recent evidence suggests this is minimal (Samelson & Yates, 1967).

Despite the many criticisms, a tremendous amount of research was stimulated by The Authoritarian Personality; initially these involved primarily correlational studies which correlated the F-scale with other personality, attitudinal, and behavioral measures, but recently manipulative studies demonstrated that authoritarians differ from non-authoritarians with regard to hostility displacement and cognitive style. It is not within the scope of this thesis to detail the massive research findings;

for extensive surveys the reader is referred to Christie & Cook (1958) and Titus & Hollander (1957). It is worthy of note, however, that persons who score high on authoritarianism are more likely to be lower class (MacKinnon & Centers, 1956; Christie & Jahoda, 1954); less educated and less intellectually sophisticated (Harvey, 1963; Kornhauser, Sheppard & Moyer, 1956; Cohn & Carsch, 1954; Hyman & Sheatsley, 1954; Christie, 1954; Klein, 1966; Plant, 1965, 1966); more prejudiced (Adorno et al, 1950; Newcomb, 1965); and more hostile following frustration (Weatherley, 1961; Berkowitz, 1959, 1950, 1961; Dillehay, 1965; Epstein, 1965; Rule, 1966; Fischer & Rule, 1967) than those who score near the median.

Although the concept of authoritarianism provides a plausible explanation of individual differences in readiness to exhibit aggressive behavior, it provides no insight into the importance of stimulus characteristics of the target of aggression. In this regard, Berkowitz (1965) proposes an eliciting-cue hypothesis, suggesting that aggression is elicited by the stimulus properties of the target of aggression.

The Eliciting-Cue Hypothesis

Berkowitz (1965, p. 308) supports the essential validity of the F-A theory, with the following qualifications: (1) that frustration creates only a readiness to exhibit aggressive behavior; and (2) given this readiness, aggression will still not occur unless the appropriate aggression eliciting cues are also present i.e.

frustration does not inevitably lead to aggression; and (3) all aggression does not necessitate the existence of frustration.

The eliciting-cue hypothesis maintains that aggression is elicited by external cues. The cue value of a stimulus is a function of "...its association with (a) observed violence, and/or (b) previous aggression instigators" (Berkowitz, 1965a, p. 314).

In support of this view (cf. Berkowitz, 1965, p. 319-320) results of brain stimulation studies by Von Holst & Von Saint Paul (1962) and Roberts & Kiess (1964) indicated that specific situational cues were necessary to elicit aggressive behavior from chickens and cats. The ethologist Tinbergen (1951) and more recently the outstanding naturalist, Lorenz (1966) reported that specific environmental stimuli are necessary to evoke aggressive responses in lower organisms. Scott (1958) in his discussion of the physiology of aggression concludes "...that there is a complex network of causal stimuli,that the chain of causation in every case eventually traces back to the outside... this means that there is no need for fighting, either aggressive or defensive, apart from what happens in the external environment" (pp. 61-62).

In addition, Berkowitz and his associates have performed a series of laboratory studies which demonstrated the importance of external cues in eliciting aggressive behavior (Berkowitz, 1965b; Berkowitz & Geen, 1966; Geen & Berkowitz, 1966; Berkowitz & Geen, 1967; Berkowitz & Holmes, 1960). In the first four of these experiments essentially the same procedure was followed. Experimental subjects were angered, exposed to filmed violence and then given

a socially sanctioned opportunity to express their aggression against stimulus targets varying in aggressive cue value. The stimulus target's aggressive cue value was varied by means of verbal labels associating him with a violent scene. Results from all four experiments supported the major theoretical prediction, that aggression is elicited by external cues.

Berkowitz & Holmes (1960) supported the hypothesis that dislike for a stimulus target increases its cue value for eliciting aggression. It is argued that dislike for a stimulus person places him in a class with previous aggression instigation, thus enhancing his aggressive cue value. In this study experimental subjects were angered, made to dislike or feel neutral toward the stimulus target and then given three socially sanctioned opportunities for aggression. Results were in accord with theoretical predictions; significantly more aggression was directed toward a disliked stimulus target than a neutral one. As Berkowitz has pointed out, it is interesting to note that frustrated subjects did not direct more aggression toward a neutral target than non-frustrated subjects; a finding which is in direct opposition to the F-A anger-drive notion.

Predictions

It was proposed that eliciting-cue theory has relevance for the understanding and predicting of aggressive behavior in prejudiced persons.

Berkowitz and his associates have shown that eliciting-cue theory predicts rather well for randomly selected subjects, (Berkowitz & Holmes, 1960; Berkowitz & Geen, 1966, 1967; Geen &

Berkowitz, 1966). It was assumed by the present author that the majority of these subjects were moderately prejudiced persons. In these studies a stimulus person with high aggressive cue value received significantly more aggression than one with low aggressive cue value, from angered subjects. Therefore, in the present study it was expected that the moderately prejudiced persons would displace significantly more aggression toward a stimulus target having a high aggressive cue value than one having a low aggressive cue value, under conditions of stress.

The high prejudiced persons, on the other hand, because of their extremely rigid, authoritarian outlook and their consequent inability to discriminate among social stimuli (Berkowitz, 1959, 1960, 1961; Rule, 1966; Fischer & Rule, 1967) were not expected to respond significantly to the differential characteristics of the stimulus person, under conditions of stress. It was therefore predicted that high prejudiced persons would not displace significantly more aggression toward a high aggressive cue value target than a low aggressive cue value target, under conditions of stress.

Since the high prejudiced person, as conceived by the authors of "The Authoritarian Personality", has a history of repressed hostility against authority, and is more likely than the moderately prejudiced person to displace aggression, following stress, (Berkowitz, 1959, 1960, 1961; Weatherley, 1961; Epstein, 1965; Dillehay, 1963; Rule, 1966; Fischer & Rule, 1967) it was expected

that high prejudiced persons would displace more aggression than moderately prejudiced persons under conditions of stress.

Based on Adorno's (1950) discussions of the "deviant low scorers", as well as experimental evidence with regard to behavior of extremists (Vetter, 1930; Dombrose & Levinson, 1950; Haimowitz & Haimowitz, 1950; Krugman, 1952; Taylor, 1960; Rokeach, 1960; Rule, 1966; Fischer & Rule, 1967) it was expected that the extremely low prejudiced person would exhibit behavior similar to that of the high prejudiced person, in all conditions.

In their discussion of deviant low scorers Adorno et al outlined four distinguishable types: the rigid low scorer, the protesting low scorer, the impulsive low scorer, and the easy-going low scorer (p. 771,ff.). The rigid low scorer is purported to have the most in common with the over-all high scorer and exhibits the most prominent stereotyped features. The authors write "... the absence of prejudice, instead of being based on some concrete experience and integrated within the personality, is derived from some general, external, ideological pattern" (p. 771). It is suggested that in these subjects the lack of prejudice is "... accidental in terms of personality, ... since with respect to many of our variables, especially rigidity and "total" thinking, they could hardly be distinguished from some of our high extremes" (p. 772). In their description of the behavior of these persons the authors report, "some of them tend to belittle the importance of racial discrimination by labelling it simply a by-product of the big issue

of class struggle, an attitude which may be indicative of repressed prejudice on their part" (p. 772).

The protesting low scorer has less in common with the high scorer, but still in many respects resembles him. With regard to this type of person the authors write:

They "protest" out of purely moral reasons against social repression or at least against some of its extreme manifestations, such as racial prejudice. ...They are often shy, "retiring," uncertain about themselves, and even given to tormenting themselves with all kinds of doubts and scruples. ...They are frequently guilt-ridden and regard the Jews a priori as "victims," as being distinctly different from themselves. ...They are guided by the wish to "make good" injustice that has been done to minorities. ...While being non-authoritarian in their way of thinking, they are often psychologically constricted and thus not able to act as energetically as their conscience demands. ...Their eternal guilt feelings tend to make them regard everyone as "guilty." Though they detest discrimination, they may find it sometimes difficult to stand up against it (p. 774).

The impulsive low scorer is more like the psychopathic high scorer in that he is extremely "impulse-ridden" and tends to "...sympathize with everything he feels to be repressed" (p. 777). This type of person, when asked why he likes Jews, gives "...much the same reasons that the high extremes had given for hating them" (p. 776). The impulsive low scorer differs from the psychopathic high scorer in that he is "...relatively free of destructive impulses: ..." (p. 777).

The easy-going low scorer is the least like the high scorers. He is described as follows:

This syndrome is the exact opposite of the "Manipulative" high scorer. Negatively, it is characterized by a marked tendency to "let things go," a profound unwillingness to do violence to any object,...and by an extreme reluctance to make decisions,.... Positively, they are inclined to "live and let live,".... They show a certain psychological richness, the opposite of constrictiveness:.... (There is a complete)...absence of aggressiveness.

Behavioral similarity of extremists is becoming increasingly evident in the experimental literature. Vetter (1930), in studying groups along a reactionary-radical continuum, reported a curvilinear relationship between extremes with regard to introversion. Reactionary men scored 16.1 and radicals 18.5, but intermediate conservatives scored only 14.8 on the Laird Personal Inventory. He also found that while radicals had an average income of \$7,100.00 and reactionaries \$7,700.00, the intermediate group had an average income of \$10,500.00. Dombrose and Levinson (1950) have confirmed Allport's (1937) hypothesis that, a liberal is not merely a mild radical, by showing that the low quartile scorers on the E scale prefer militant measures whereas the middle low quartile scorers prefer pacifist programs. These findings support the view that extremists' favor similar behavior patterns.

A study by Haimowitz and Haimowitz (1950) also supports this contention. They investigated the effect of intensity of attitude on attempts at attitude change. Results indicated that the intensity of attitude held, regardless of direction, was the

critical variable in success of training sessions designed to modify it. On the basis of their results they concluded that the two extreme groups were more similar to each other than they were to the intermediate group.

Krugman (1952) investigated a group that may be considered as deviant low scorers. Ex-members of the communist party were interviewed, and the author reported many instances of behavior bearing a striking similarity to authoritarianism of the political right. Taylor (1960) compared perceptual closure tendencies of extreme liberals, extreme conservatives and intermediate groups. Extreme liberals were defined as those expressing relatively strong disagreement with the authoritarian beliefs of the F scale and accepting ethnic minorities; extreme conservatives as those expressing relatively strong agreement with items of the F scale and rejecting ethnic minorities; and intermediates were defined as those expressing neither strong agreement nor strong disagreement with the items on the two scales. He found that persons at the extremes manifested similar perceptual closure tendencies, and concluded that extremists tend to be genotypically similar and phenotypically different. Rokeach (1960) proposed that individuals who adhere to extreme points of view tend to manifest similar behavior even although the content of their attitudes differ. Rule (1966) found that extremely high and extremely low scorers on the A-S scale reported greater personality differences between two strangers, and were more negative in their evaluations than were those who scored near the median of the distribution. Fischer and Rule (1967) found that extremely high

and extremely low prejudiced persons were more favourable than moderately prejudiced persons in their evaluations of strangers, under mild stress, whereas the moderately prejudiced persons were more favourable under conditions of severe stress.

In summary, specific predictions were as follows:

- (1) extremely high and extremely low prejudiced persons would manifest similar behavior, under conditions of stress;
- (2) significantly more aggression would be expressed towards a stimulus person having a high aggressive cue value than one having a low aggressive cue value;
- (3) significantly more aggression would be expressed by high and low prejudiced persons than moderately prejudiced persons, following stress;
- (4) moderately prejudiced persons, following stress, would discriminate between the two stimulus targets, and displace significantly more aggression toward a stimulus person having a high aggressive cue value than one having a low aggressive cue value; whereas the high and low prejudiced persons, following stress, would not discriminate between the two stimulus targets, and would not express significantly more aggression against a stimulus person having a high aggressive cue value compared to one having a low aggressive cue value.

Method

The interaction of prejudice, stress and aggressive cue value of the stimulus target in displaced aggression was investigated by placing subjects in a non-interacting group situation and having them evaluate other members of the group. Anti-Semitism and F scales (Adorno et al, 1950) administered approximately two months prior to the commencement of the study, were used to determine the levels of prejudice. Stress and aggressive cue value variables were experimentally manipulated during the session.

Stress, or frustration, was produced by giving each subject unfavorable evaluations of himself, one ostensibly from a peer and another from E. Frustration, in this study, was thus manipulated by attacking the self concept.

Aggression is an overt response which may be physical or verbal. In the present study, verbal aggression was defined in terms of negativity of evaluations of people.

The Design

Three levels of prejudice, two levels of stress and two levels of aggressive cue value of the stimulus target formed a 3 x 2 x 2 factorial design. The three levels of prejudice were respectively, high, moderate and low; the two levels of stress, high and low; and the two levels of aggressive cue value were high and low.

Cardiac activity measured throughout the experimental session, provided a continuous record of level of physiological arousal, which

was related to the behavioral data.

Subjects

Seven hundred and twenty-eight male and female introductory psychology students at the University of Alberta completed a questionnaire which included a 10-item anti-semitism scale and a 28-item F scale (Adorno et al, 1950). Appendix D contains these scales.

For both scales, items varied from five points for a response indicating strong agreement with an item to one point for a response indicating strong disagreement. The resulting distributions for the total sample were: A-S scale, range 10-50, median 22; F scale, range 41-114, median 76. From this sample ninety-six male subjects were selected for study. Experimental groups consisted of thirty-two subjects each of high, medium and low prejudiced persons. Prejudice was determined by joint selection on the two scales. The high prejudiced groups consisted of the upper one-fifth of the A-S distribution and the upper one-third of the F distribution, the medium consisted of the middle one-fifth and one-third of each distribution respectively, and the low prejudiced group consisted of the lower one-fifth and one-third of each distribution respectively. The median scores for the groups were: high A-S 29, F 85; medium A-S 22, F 75; low A-S 14, F 63.

Apparatus and Materials

The experimental room contained four chairs and a table six feet long divided by plywood panels into four compartments. Another plywood panel enclosed the front of each compartment. A small 4 x 10

inch aperture at the bottom-center of each front panel permitted passage of written material to and from the subjects.

Heart rate, a measure of autonomic activity, was recorded using a 4 -channel Beckman Type R dynograph.

Rating scales, contained in Appendix A, were used to measure displaced aggression. They consisted of thirteen bipolar adjectives, each evaluated using a 7-point system. A score of 7 indicated a high aggression rating, a score of one indicated a low aggression rating.

Pre-established ratings were used to create stress. These are found in Appendix B. There were two neutral and two negative ratings, one each from a peer and the experimenter respectively. Mean scores of 4.38 and 4.46 were used as the neutral ratings from the peer and the experimenter, respectively. Mean scores of 5.53 and 4.77 from the peer and the experimenter, respectively, were used as the negative rating. Favorable and unfavorable paragraphs used to manipulate the stimulus targets aggressive cue value are found in Appendix C. The favorable paragraph labelled the stimulus target as one who wanted to go to an eastern university, was not accepted and consequently came to the University of Alberta, Edmonton. He is enjoying his stay, thinks the people of Edmonton are friendly and plans to remain. The unfavorable paragraph gave the impression of one who is bitter about not being accepted at an Eastern university, does not like the people of Edmonton and does not plan to stay on.

Procedure

Subjects were brought together ostensibly for the investigation of physiological correlates of first impressions of people. They were run in 24 groups of four, and each group was homogeneous with respect to anti-Semitism and sex. To begin the session Ss briefly introduced themselves to each other and during the introduction the E determined whether any of the group members had been acquainted prior to the experimental session. The nature of the study demanded that the group members be complete strangers and any exceptions would have required re-scheduling. There were none. No further interaction among subjects was permitted.

Subjects were seated in compartments which restricted their range of observations and were asked to remain quiet and relaxed while cardiographic leads (biopotential electrodes), used to measure autonomic activity, were attached. They were given the following instructions:

"The purpose of this study is to investigate physiological correlates of first impressions of people. The paraphernalia you see on the table in front of you are electrodes. I want to fasten electrodes to your chest and measure heart rate. There is no shock involved with the electrodes. They are perfectly harmless.

I must have a base level from which to evaluate changes in heart rate so I would ask you to be seated, to remain relaxed and not talk while I attach the electrodes and adjust the polygraph settings."

The biopotential electrodes were attached to the chest by placing the positive lead on the left side of the chest over the heart and the negative lead to the lower left side of the body. The ground lead was attached immediately below the heart between the positive and negative

leads. Electrode paste and adhesive collars were used to ensure proper connection of the leads.

Following a two minute rest period each S was given a pencil and paper and asked to write a short paragraph about himself telling, generally, how he was getting on at the University and how well he liked the city of Edmonton. Two minutes were allotted for this task. Then each S was given a rating scale, consisting of 13 bipolar adjectives, and asked to evaluate the person seated second on his left. Instructions were as follows:

"The next step in the experimental procedure involves obtaining your initial impressions of the other members of the group. Here is a rating scale. I want you to rate the person whose name appears at the top of the page. He is the second person on your left. For those of you seated at the ends think of yourselves as being seated in a circle and you can visualize the person second on your left.

I will read the instructions regarding the use of the rating scale with you."

When completed, the evaluations were passed to E who ostensibly distributed them to the appropriate person, but in fact substituted neutral or negative evaluations. The following instructions accompanied the distribution of these evaluations:

"To give you an idea of other people's first impression of you I'm going to pass these ratings on to each of you. This is a rating of yourself from the person seated second on your left. Look at it briefly and pass it back."

It was assumed that receiving an unfavorable evaluation of oneself from a peer, without apparent justification, would induce stress. This procedure was repeated, with a second neutral or negative evaluation,

this time originating from E. Again, it was accompanied with the following instructions:

"I have rated you also. Here are my first impressions of each of you. Look at them briefly, and pass them back."

Other researchers have used this type of stress inducing procedure successfully (Berkowitz, 1959).

The last phase of the experimental procedure involved manipulation of the aggressive cue value of the stimulus target and obtaining displaced aggression data. Each S was told that he would be asked to rate the person seated on his immediate right and before doing so would be given the paragraph ostensibly written by this person. These, of course, were exchanged for neutral (low aggressive cue value) or negative (high aggressive cue value) paragraphs prepared in advance by the E. The instructions went as follows:

"Lastly, I want to get your impressions of the person seated on your immediate right. I'll give you a rating scale and I want you to rate him. Before you do that I'll give you more information about this person. Here is the paragraph he wrote about himself at the beginning of the experiment session. Read it and pass it back."

It has been demonstrated that dislike for a stimulus person increases aggressive cue value for that person (Berkowitz & Holmes, 1960). The purpose of the negative paragraph was to promote dislike; and hence a high aggressive cue value target for one-half of the experimental subjects.

Finally each S was again given a rating scale and instructed to rate the person seated on his right. It was pointed out that this

person's name appeared at the top of the sheet and that this was indeed the same person who had written the paragraph they had just read.

With completion of the experimental session Ss were informed of the true nature of neutral and negative ratings, the favorable and unfavorable paragraphs, and were asked to maintain secrecy until completion of the study, which would be in approximately one month.

Heart rate was recorded continuously throughout the experimental session. The time lapse for the entire experiment was approximately 40 minutes.

Results

Behavioral data consisted of evaluations of a stimulus person by high, medium and low anti-Semitic subjects. Total scores over thirteen adjectives for the person evaluated were analyzed using a $3 \times 2 \times 2$ factorial design. These are found in Appendix E. A low score indicated a favourable evaluation; a high score an unfavorable evaluation. There were three levels of prejudice, two levels of stress and two levels of aggressive cue value of the stimulus target.

Results of the analysis, summarized in Table I, indicated the following relationships. Evaluations differed for the high, moderate and low prejudiced persons; less friendliness was expressed by the high prejudiced persons than the low or moderately prejudiced persons ($F = 7.93$, $df\ 2/34$, $p < .005$). The means were 47.75, 51.13 and 44.22 for the low, high and moderately prejudiced persons respectively. A Duncan's multiple range test of the difference between means indicated that only the high prejudiced group differed significantly from the other two, which did not differ. For purposes of interpretation, all means were transformed to a 7-point friendly - unfriendly dimension by dividing them by the number of bipolar adjectives included in a scale, thirteen. Thus the means became 3.67, 4.08 and 3.40 for the low, high and moderately prejudiced persons respectively.

Less friendliness was expressed toward a person having a high aggressive cue value than one having a low aggressive cue value ($F = 53.4$, $df\ 1/34$, $p < .005$). The original means were 41.66 and 55.08,

TABLE I

ANALYSIS OF VARIANCE SUMMARY TABLE FOR
THE DISPLACED AGGRESSION DATA

Source	df	SS	MS	F
Prejudice (P)	2	1287.27	643.64	7.93**
Stress (S)	1	304.59	304.60	3.75
P x S	2	378.56	189.28	2.33
Aggressive Cue (C)	1	4333.59	4333.59	53.40**
P x C	2	332.31	166.16	2.05
S x C	1	123.76	123.76	1.53
P x S x C	2	7.52	3.76	.05
Error	84	6816.63	81.85	
Total	95	13584.20		

CELL MEANS FOR THE PREJUDICE X STRESS X AGGRESSIVE CUE
VALUE INTERACTION

Condition	No Stress		Stress	
	Low Agg. Cue	High Agg. Cue	Low Agg. Cue	High Agg. Cue
Low Prej.	3.28ab	4.02bc	3.18ab	4.13bc
Mod. Prej.	2.72a	3.92bc	2.64a	4.32bc
High Prej.	3.38ab	4.10bc	3.93bc	4.93c

Note - Cells with different subscripts are significantly different from one another at, at least, the 5% level by Duncan multiple range test.

* $p \leq .05$

** $p \leq .01$

TABLE II

MEAN EVALUATION SCORES FOR THE
PREJUDICE, STRESS GROUPS

Condition	No Stress	Stress
Low Prejudice	3.69ab	3.66ab
Moderate Prejudice	3.32b	3.48b
High Prejudice	3.74ab	4.43a

Note - Cells with different subscripts are significantly different from one another at, at least, the 5% level by Duncan's multiple range test.

which when transformed in the above manner, became 3.20 and 4.23 for the low and high aggressive cue value persons, respectively. A Duncan's multiple range test of the difference among the prejudice, stress and aggressive cue value interaction means, contained in Table I, revealed that the low and high aggressive cue value means were significantly different, for both the stress and non-stress conditions, only for the moderately prejudiced group, and not for either the low or high prejudiced groups.

No other main effects or interactions were significant in the analysis of variance. However, a Duncan's test on the transformed prejudice stress group means, found in Table II, indicated that the high prejudiced stress group exhibited significantly more aggression than the moderately prejudiced stress group, and that there was no difference among the non-stress groups.

A second set of data consisted of cardiac activity measures recorded throughout the study. Change in heart rate was determined by comparing the number of heart beats within a 15-second interval prior to and immediately following particular experimental events. Data consisted of pre- and post-event total scores which were analyzed using a 3 x 2 x 2 x 2 split-plot design.

Comparison of the pre- and post-heart rate associated with the stress and non-stress procedure, shown in Table III, revealed that prejudice, stress and trials significantly interacted ($F = 3.62$, $df\ 2/34$, $p \leq .05$). Table IV contains the means for this interaction. Post-event heart rate for the high and low prejudiced persons decreased for the stress

condition, relative to the non-stress condition, whereas it increased for the stress condition, relative to the non-stress condition, for the moderately prejudiced persons. Pre-event heart rate for the low and moderately prejudiced persons increased for the stress group, relative to the non-stress group, whereas it decreased for the stress group, relative to the non-stress group for the high prejudiced persons. A Duncan's multiple range test of the difference among these group means indicated the following: that the post-event heart rate difference between the stress and non-stress conditions was significant only for the moderately prejudiced group; and that there were no significant differences between the stress and non-stress conditions for the pre-event groups.

To assess possible cathartic effects an analysis was performed on the pre- and post-heart rate data associated with evaluation of other people. These results, found in Table V, revealed a significant difference between the pre and post-measures ($F = 14.49$, $df\ 1/84$, $p\ < .005$). The means were 85.44 and 82.24 for the pre- and post-evaluation heart rates, respectively. Also in the analysis, heart rate for the stress groups decreased significantly more than heart rate for the non-stress groups ($F = 4.03$, $df\ 1/84$, $p\ < .05$). The means for this interaction are contained in Table VI. A Duncan's multiple range test of the differences among these group means indicated that the pre- and post-evaluation heart rate was significantly different only for the stress groups. The means were 85.68 and 81.00 for the pre- and post-measures, respectively.

No other main effects or interactions were significant.

TABLE III

ANALYSIS OF VARIANCE SUMMARY TABLE FOR PRE- AND POST-
HEART RATE ASSOCIATED WITH STRESS INSTRUCTIONS

Source	df	SS	MS	F	Error
Prejudice (P)	2	13.04	6.52	.28	1
Stress (S)	1	.005	.005	.00	1
P x S	2	44.04	22.02	.96	1
Aggressive Cue (C)	1	7.13	7.13	.31	1
P x S	2	73.04	36.52	1.59	1
S x C	1	55.26	55.25	2.41	1
P x S x C	2	36.79	18.40	.80	1
Trials (T)	1	.005	.005	.003	2
P x T	2	3.79	1.90	1.90	2
S x T	1	1.5	1.51	.87	2
P x S x T	2	12.54	6.27	3.62*	2
C x T	1	.006	.006	.003	2
P x C x T	2	.79	.396	.29	2
S x C x T	1	.047	.047	.03	2
P x S x C x T	2	2.38	1.19	.69	2
Error (1)	84	1929.94	22.97		
Error (2)	84	145.44	1.73		
Total	191	2325.75			

* $p < .05$

TABLE IV

MEAN HEART RATE FOR THE PREJUDICE, STRESS AND TRIAL GROUPS

Condition	TRIAL					
	Pre Event Heart Rate			Post Event Heart Rate		
	No Stress	Stress	Diff.	No Stress	Stress	Diff.
Low Prejudice	84.76ab	86.00ab	1.24	86.24bc	83.24ab	-3.00
Moderate Prejudice	81.00ac	83.48ab	2.48	80.00a	87.76b	+7.76
High Prejudice	88.76b	83.00ab	-5.76	86.24bc	83.76ab	-2.48

Note - Cells with different subscripts are significantly different from one another at the 5% level by Duncan's multiple range test.

TABLE V

ANALYSIS OF VARIANCE SUMMARY TABLE FOR PRE- AND POST-
HEART RATE ASSOCIATED WITH EVALUATION

Source	df	SS	MS	F	Error
Prejudice (P)	2	14.07	17.04	.28	1
Stress (S)	1	3.25	3.25	.13	1
P x S	2	42.07	21.04	.84	1
Aggressive Cue (C)	1	26.25	26.25	1.05	1
P x C	2	33.45	16.72	.67	1
S x C	1	68.88	68.88	2.76	1
P x S x C	2	9.20	4.60	.18	1
Trial (T)	1	30.88	30.88	19.49**	2
P x T	2	1.82	.91	.57	2
S x T	1	6.38	6.38	4.03*	2
P x S x T	2	4.20	2.10	1.32	2
C x T	1	3.26	3.26	2.05	2
P x C x T	2	2.57	1.29	.81	2
S x C x T	1	.13	.13	.08	2
P x S x C x T	2	3.20	1.60	1.01	
Error (1)	84	2100.06	25.00		
Error (2)	84	133.06	1.56		
Total	191	2482.75			

* p \angle .05** p \angle .005

TABLE VI
MEAN HEART RATE FOR THE STRESS, TRIAL GROUPS

Condition	Pre- Evaluation	TRIAL	
		Post Evaluation	Diff.
No stress	85.24a	83.48ab	1.76
Stress	85.68a	81.00b	4.64

Note - Cells with different subscripts are significantly different from one another at the 1% level by Duncan's multiple range test.

Discussion

Consistent with expectation was the finding that a less favorable evaluation was expressed towards a person having a high aggressive cue value than one having a low aggressive cue value. This finding supports the view, that aggression is elicited by external cues (Berkowitz, 1965a; Geen & Berkowitz, 1966; Berkowitz & Geen, 1966, 1967). This result also has theoretical import. Establishing that aggression, to a large degree, is dependent upon external factors leads to a revision of the traditional view, which holds that aggression is primarily dependent upon the presence or absence of inhibitions, to one which places more emphasis on the role of external cues. To avoid overt aggression, not only should inhibitions toward aggression be nurtured, but also aggressive cues in the environment should be minimized.

Although the means for the aggressive cue value main effect were significantly different (3.20 and 4.23 for the low and high aggressive cue value persons respectively) they are relatively neutral on a 7-point aggression scale. This suggests tempering the use of the term, "aggression"; "unfriendliness" might more appropriately describe the behavior of the subjects in the present study. This failure to find more severe aggression suggests that the stress created in the present study was extremely mild. It is assumed that an increase in stress would produce an increase in negativity of response, and perhaps further accentuate the relative differences between the various experimental conditions.

Evidence supported the prediction that high prejudiced persons would express significantly more aggression than moderately prejudiced persons, following stress. Again, since the scores were relatively neutral on a 7-point scale, the term, "unfriendliness", may be substituted for, "aggression." In the analysis, a Duncan's test on the mean evaluation scores for the prejudice-stress groups, shown in Table II, revealed no difference between the high and moderately prejudiced groups in the non-stress condition, and a significant difference between these two groups in the stress condition. Thus it appears that it was the high prejudiced stress group which was most responsible for the significant prejudice main effect, found in the original analysis of variance. This finding has considerable previous empirical support (Perkowitz, 1959, 1960, 1961; Weatherley, 1961; Epsteins, 1965; Dillehay, 1965; Rule, 1966; Fischer & Rule, 1967), and is in accordance with the theoretical conception of the authoritarian personality (Adorno et al, 1950).

Failure to find clear support for the prediction that extremely low prejudiced persons would behave similarly to the high prejudiced persons, and therefore also express more aggression than moderately prejudiced persons, under conditions of stress, requires further comment. Adorno et al, reported that the low scorers, as a group, were more diverse than the high scorers. Four distinguishable types of low scorers were described: the rigid low scorer, the protesting low scorer, the impulsive low scorer and the easy-going low scorer. Of these types, the first three, the rigid low scorer, the protesting low

scorer, and the impulsive low scorer are most like the high scorer; whereas the last type, the easy-going low scorer is most unlike the high scorer. The easy-going low scorer is characterized by a definite tendency to let things go, to inhibit the expression of aggression, and to maintain a policy of non-committal. It is certainly possible that a disproportionate number of easy-going low scorers in the experimental sample could bias the predicted results in favor of less extremeness. In this regard, Adorno et al, reported that protesting low scorers and easy-going low scorers were most prevalent in their sample (P. 771).

A more plausible explanation is perhaps that, the low scorers as a group, have learned to partially inhibit the expression of overt aggression. The fact that these persons have scored extremely low on the A-S scale may be indicative of a greater underlying denial or repressive tendency in the low scorers than the high scorers. If, in fact this is so, one might expect that a higher degree of stress is required to overcome this repressive force in low scorers. It is possible that the procedure in the present study did not create stress of sufficient strength to facilitate eliciting aggression from the low scorers. The low overall level of aggression displayed lends support to this view. More research into the behavior of extreme low scorers is necessary before definite conclusions can be drawn.

Partial support was obtained for the hypothesis that under conditions of stress, moderately prejudiced persons would discriminate among stimulus targets, in terms of displaced aggression, whereas high

and low prejudiced persons would not. This prediction implies that moderately prejudiced persons make finer discriminations, under stress, than do high and low prejudiced persons. Therefore clear support required a significant prejudice, stress, aggressive cue interaction. As this was not evident in the analysis of variance, a Duncan's test was performed on the group means. The results revealed that the moderately prejudiced group displayed significantly less friendliness towards a stimulus person having a high aggressive cue value than one having a low aggressive cue value, in both the stress and non-stress conditions; whereas the high aggressive cue value stimulus person did not receive significantly less friendliness from the high and low prejudiced groups, for either the stress or non-stress conditions. This analysis indicated that the moderately prejudiced person did, indeed, discriminate significantly between stimulus targets under conditions of stress; and that high and low prejudiced persons did not. However, failure to find a significant prejudice, stress aggressive cue interaction in the analysis of variance suggested that the high, low and moderately prejudiced groups did not differ significantly in terms of discrimination between the two stimulus targets. As has been suggested, the stress encountered by the subjects in the present study was extremely mild; perhaps an increase in the level of stress would clarify these results. Consistent with this thinking, other studies have indicated that differences between high and moderately prejudiced persons emerge only under conditions

of relatively severe stress (Berkowitz, 1959, 1961; Epstein, 1965; Dillehay, 1965; Rule, 1966; Fischer & Rule, 1967).

It is becoming well documented that there are reliable behavioral differences among persons as a function of prejudice and stress (Adorno et al, 1950; Berkowitz, 1959, 1960, 1961; Weatherley, 1961, 1963; Epstein, 1965; Dillehay, 1965; Rule, 1966; Fischer & Rule, 1967). It is therefore of particular interest that there may well be concomitant patterns of autonomic activity. The significant prejudice, stress and trial interactions in the analysis of variance of the heart rate data associated with the stress procedure lends at least, partial support to this view. With regard to the post-event heart rate it may be noted that, for the stress groups relative to the non-stress groups, the mean heart rate decreased for the high and low prejudiced groups, whereas it increased for the moderately prejudiced group. This suggests a specific pattern of autonomic activity for high, moderate and low prejudiced persons.

Lacey, J.K., Lacey, B.C. (1958) were among the first researchers to suggest that persons exhibit "idiosyncratic" patterns of autonomic activity. They found that the number of bursts of cardiac activity during rest showed a good deal of consistency when the subjects were retested after a period of 48 hours, and also that cardiac activity during rest was related to cardiac activity during performance of various tasks. Duffy (1962) speculated that the consistency of individuals with respect to autonomic activity might

be expected as a result of two factors: (1) physiological similarities with regard to functioning of the nervous system, endocrine system, etc.; and (2) similarity of learning experiences leading to the formation of similar habits.

There are a number of possible interpretations of the present finding. Heart rate deceleration, in conjunction with increased aggression, in the case of the high and low prejudiced groups, lends support to Ax's (1953) finding that anger can be associated with heart rate decrease. On the other hand, heart rate acceleration, in conjunction with increased aggression, in the case of the moderately prejudiced group, is consistent with Hokanson & Burgess' (1962a, 1962b, 1964) findings that "ego threat" and "goal blocking" frustrations typically produce significant increases in heart rate and blood pressure, in a random population.

Another plausible explanation is that the high and low prejudiced persons reached a different state of arousal than the moderately prejudiced persons, as a result of the stress procedure. A Duncan's test of the differences among the group means in the significant prejudice, stress, trial interaction, revealed a significant difference between the stress group, relative to the non-stress group, only for moderately prejudiced persons. This finding suggests that the stress procedure affected the high and low prejudiced persons in a different manner than the moderately prejudiced persons, in terms of magnitude of change in heart rate. The behavioral data were ambiguous and provided no clarification regarding possible differential stress effects.

Still another possibility is that heart rate change for the high and low prejudiced persons was not detected because of its multiphasic pattern, which becomes obliterated when heart rate is averaged over the 15-second time interval utilized in this study. Hein et al (1966) emphasized the importance of using short time intervals in detecting physiological changes. They measured conditioned heart rate responses for field dependent and field independent subjects and found that for field independent subjects heart rate accelerated for the first 5 seconds following stimulus onset, then decelerated during the next 5 seconds. Field dependent subjects, on the other hand, exhibited no change in heart rate during the first 5 seconds following stimulus onset, and heart rate deceleration during the next 5 seconds. Five second analysis in the present study seemed inappropriate because of the impreciseness of stimulus onset and offset for each individual in the group setting. Further research should regulate stimulus onset more precisely making possible the examination of shorter time intervals in measuring autonomic responses.

In brief, despite the difficulty in interpretation, it is significant that the extreme groups, identified as similar behaviorally, exhibited, at least on one occasion, (the post-stress trial) the same pattern of autonomic activity.

It is proposed that the significant stress and trial interaction in the analysis of variance of pre- and post-heart rate associated with evaluation has relevance for the importance of anger and target

substitutability in catharsis theory (cf. Bandura & Walters, 1963, pp. 253-258).

The catharsis hypothesis proposes that "the occurrence of any act of aggression is assumed to reduce the instigation to aggression" (Dollard et al, 1939, p. 50). In other words, catharsis refers to the expression of aggression; and the cathartic effect refers to the decrease in probability of further aggression as a consequence of this expression. The idea of catharsis dates as far back as the ancient Greeks. It referred to "... the purging of the passions or sufferings of spectators through precarious participation in the suffering of a tragic hero as this is portrayed on the stage" (Bandura & Walters, 1963, pp. 253-254). The catharsis concept arose out of psychoanalytic theory, "... in psychoanalytic writings catharsis referred to the liberation of affect through the re-experiencing of blocked or inhibited emotions, which is supposedly an essential phase in the resolution of unconscious conflict" (p. 254).

Empirical evidence with regard to the catharsis hypothesis has been, at best, controversial and for the most part, negative (Kenny, 1952; Feshbach, 1956; Rosenbaum & deCharms, 1960; Kahn, 1960; Buss, 1961; Hartman, 1965; Holmes, 1966). This is especially true with regard to studies involving vicarious participation in aggressive activities of models who have been rewarded, or at least unpunished (Bandura, Ross & Ross, 1961; 1963a, 1963b; Lovaas, 1961; Mussen & Rutherford, 1961; Siegel, 1956; Walters, Leat & Mezei, 1963; Walters & Llewellyn Thomas, 1963; Walters, Llewellyn Thomas & Acker, 1962).

There are, however, some studies that obtained results consistent with the catharsis hypothesis (Feshbach, 1955; 1961; Thibaut & Coules, 1952; Hokanson & Shetler, 1961; Hokanson & Burgess, 1962a, 1962b, 1963). These studies were concerned generally with tension-reduction following aggression.

The controversial experimental findings led to revision of the original formulation (Buss, 1961; Feshbach, 1956, 1961; Berkowitz, 1964, 1965a). Feshbach suggested that aggression is cathartic only when the "anger arousing" and the "aggression" situations are related, in terms of stimulus properties; otherwise aggression is not cathartic. Buss suggested that the most important determiner of the occurrence of catharsis is the presence or absence of anger. A constituent of the anger state is heightened physiological arousal. Aggression in the presence of this state produces a lowering of physiological arousal and therefore, a cathartic effect. Aggression in the absence of this state, however, produces no lowering of physiological arousal because there is no heightened physiological state to lower; consequently there is no cathartic effect.

Berkowitz (1965a) suggested that what is commonly meant by the term "catharsis" can be better understood as a special case of a "completion tendency". It is assumed, with some empirical support (Zeigarnik, 1927; Ovsiankina, 1928), that an activity will tend to continue until the activity goal is reached; and that preventing one from reaching this goal, such as interrupting the activity, is a source of frustration. With regard to aggressive behavior, it is

postulated that inflicting injury on the intended target is the goal response completing the aggressive response sequence. When one is instigated to aggress and a response sequence is initiated, completion is not attained until the target is believed to have suffered injury. Anger does not inevitably activate a response sequence, rather it creates only a readiness for aggression; appropriate cues must also be present in order that a response sequence be initiated.

Recent studies with regard to catharsis theory have demonstrated physiological tension-reduction following the completion of an aggressive sequence (Hokanson & Shelter, 1961; Hokanson & Burgess, 1962a, 1962b, 1963). In a series of studies, Hokanson and his associates tested the hypothesis that the expression of aggression, following frustration, produced a greater reduction in physiological arousal than having no opportunity to aggress. Essentially, the results confirmed the hypothesis; opportunity for verbal aggression towards a low status frustrater led to reduction in systolic blood pressure and heart rate, whereas no opportunity to aggress led to a maintenance of elevated heart rate and blood pressure.

Not all evidence is affirmatory, however, Holmes (1966) found precisely the opposite results to Hokanson et al; subjects not permitted to respond to frustration with aggression reduced blood pressure and heart rate significantly more than subjects who were permitted to respond to frustration with overt aggression against the frustrater. Holmes suggested that perhaps the fact that the frustrating experimenter remained physically present throughout the session, in the former studies,

accounted for their differing results. Continued presence of the frustrater apparently reminded the subjects of the provocations they had received and led to continued resentment against the frustrater, which in turn, led to maintenance of physiological arousal for the No-Opportunity-To-Aggress subjects.

An important question with regard to catharsis theory which has not been adequately researched is "What kind of stimulus target will lead to catharsis," or in Berkowitz's term, "completion?" Berkowitz suggested that only a relatively narrow range of possible substitute targets will yield completion. Presumably these are those having a high aggressive cue value, such as a frustrating person, or stimuli associated with a frustrating person.

There have been two types of experiments investigating the substitutability of various targets following the activation of an aggressive sequence: those dealing with the observation of filmed violence; and those dealing directly with reduction in physiological arousal. Those studies dealing with the effect of filmed violence indicated that observation does not produce a substitute completion (Berkowitz, 1965a; Berkowitz & Geen, 1966; Geen & Berkowitz, 1966; Berkowitz & Geen, 1967). These studies found that angered male college students expressed stronger, rather than weaker, hostility toward their frustrater after observing a filmed villain being beaten than after witnessing a neutral, non-aggressive scene.

A more appropriate experiment by Hokanson, Burgess & Cohen (1963) dealing directly with the problem, reported that frustrated college students exhibited a reduction in blood pressure level

following aggression against the frustrater, but that a similarly frustrated control group did not show as much of a reduction in blood pressure following aggression against a substitute target, the frustrater's assistant. According to these findings completion appears most readily achieved through aggression against the frustrater.

Results from the present study suggested that aggression against one person can substitute for aggression against another. Frustrated subjects given an opportunity to aggress against a peer, who was not associated with the source of the frustration, reduced physiological level significantly following aggression (see Table V). The finding that a significant reduction in physiological arousal occurred only for the frustrated subjects supported the view that anger, at least facilitates and perhaps is essential, in initiating an aggressive response sequence which will lead to completion (Buss, 1961; Berkowitz, 1965a). This finding is also consistent with that of Mallick & McCandless' (1966) which demonstrated that aggression without anger lacks cathartic value. Although the present results regarding catharsis theory are consistent with those from other studies, one must be aware that they were not predicted *apriori*, and that such post-hoc analysis must be done with extreme caution. Further research is required to substantiate these findings.

In summary, this thesis has argued that the occurrence of overt aggression is a function of both internal and external factors. In support of this view, a manipulative study indicated that the level

of prejudice, the amount of frustration, and the aggressive cue value of the stimulus target were important variables in determining the amount of verbal aggression exhibited.

Methodological Issues

Methodological problems plague all areas of scientific research. Aggression is no exception. How is stress, or frustration best produced in the experimental laboratory, for example? There are two primary methods of inducing stress in the experimental setting (Buss, 1961): (a) failure, and (b) attack. Some experimenters use either one or the other (Berkowitz, 1961; Rule, 1966), and many use a combination of the two methods (Weisse & Fine, 1956; Zuckerman, 1955; Funkenstein, et al, 1957; Fischer & Rule, 1967). Weiss & Fine (1956) failed subjects and also derided their ability; Zuckerman (1955) failed subjects and then insulted their intelligence; Funkenstein et al, (1957) gave subjects successively more difficult tasks and as they began to fail, the experimenter criticized them in a sneering, exasperated manner; Fischer & Rule (1967) failed subjects and then attacked their self-concept. The present study used only the attack method, and although there were two instances of attack, one from the experimenter and one from a peer, this may not have been as potent as a combination of failure and attack. Further difficulties arise from the use of the E and a peer as attacking agents. Buss (1961) points out that subjects may be constrained by the presence of a high status authority figure, and therefore attacks employing a lower status peer as the attacking agent should be more successful in eliciting aggression than attacks employing a high status experimenter. Consistent with this view, empirical studies have shown that where the E is both the source of

frustration and target of aggression, his status is an important variable in determining the amount of aggression directed toward him (Berkowitz, 1959; Epstein, 1965). The confounding of the status variable in the present study, perhaps, contributed to an inhibition of anger responses, resulting in only minimal arousal; or possibly differential arousal as a function of prejudice. Perhaps the utilization of a combination of failure and attack would have been a more adequate means of inducing stress.

A further problem is that of measuring the intensity of aggression. Assessment of the dependent variable is one of the more serious problems in the study of behavior, and the study of aggression is no exception. Because of the difficulties associated with allowing physical aggression to occur in the laboratory, and of assessing the intensity of verbal aggression, many psychologists have turned to indirect measurement of aggression. These methods include projective techniques such as TAT, questionnaires which inquire about subject's opinions, rating scales which require subject's evaluations, etc. Most of these indirect measures are subject, in various degrees, to response sets such as faking and acquiescence, and to inhibition of report due to obvious references to aggressive tendencies. The rating scale, the method used in the present study, avoids the problems of response sets, however it's likely that it does not avoid entirely the problem of inhibition of report.

Many problems are involved with regard to the measurement and analysis of autonomic components of anger and aggression. For example,

which of the measures of autonomic arousal, systolic blood pressure, diastolic blood pressure, heart rate, GSR, muscle potential, respiratory rate, is the most reliable index of anger. It was evident in the present study, the interpretation of heart rate as a correlate of anger, was not without difficulty. Heart rate for some subjects accelerated, while for others it decelerated, following the stress inducing procedure. Does this mean that some subjects were angry while others were not, or that some subjects were anxious or afraid? No conclusive answers, as yet, can be given to such questions. The precise analysis of physiological data presents a further problem. For example, for heart rate, should the analysis be restricted to 1-second intervals, 5-second intervals, 15-second intervals, 30-second intervals, etc? These are just a sample of the many problems involved. The development of the field of psychophysiology has not yet progressed to the stage where precise answers can be given to these issues. Results in the experimental literature, to date, are extremely controversial (Ax, 1953; Schachter, 1957; Holmes, 1966; Hokanson & Burgess, 1962a, 1962b, 1964; Graham, 1966). Systematic research into each of these problems is required.

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A P P E N D I C E S

APPENDIX A
RATING SCALE

NAME _____

WARM		COLD
BAD		GOOD
FRIENDLY		UNFRIENDLY
DEPENDENT		INDEPENDENT
SOCIABLE		UNSOCIABLE
QUARRELSOME		CONGENIAL
GRATEFUL		UNGRATEFUL
STUPID		INTELLIGENT
LAZY		DILIGENT
AFFECTIONATE		HATEFUL
DISCONTENTED		CONTENTED
CHEERFUL		GLUM
UNFEELING		FEELING

APPENDIX B

NO STRESS - NEUTRAL RATING FROM PEER - MEAN SCORE OF 4.38

NAME Kurt

WARM	x	COLD
BAD	x	GOOD
FRIENDLY	x	UNFRIENDLY
DEPENDENT	x	INDEPENDENT
SOCIABLE	x	UNSOCIABLE
QUARRELSOME	x	CONGENIAL
GRATEFUL	x	UNGRATEFUL
STUPID	x	INTELLIGENT
LAZY	x	DILIGENT
AFFECTIONATE	x	HATEFUL
DISCONTENTED	x	CONTENTED
CHEERFUL	x	GLUM
UNFEELING	x	FEELING

APPENDIX B (continued)

NO STRESS - NEUTRAL RATING FROM EXPERIMENTER - MEAN SCORE OF 4.46

NAME Kurt

WARM	x	COLD
BAD	x	GOOD
FRIENDLY	x	UNFRIENDLY
DEPENDENT	x	INDEPENDENT
SOCIABLE	x	UNSOCIABLE
QUARRELSOME	x	CONGENIAL
GRATEFUL	x	UNGRATEFUL
STUPID	x	INTELLIGENT
LAZY	x	DILIGENT
AFFECTIONATE	x	HATEFUL
DISCONTENTED	x	CONTENTED
CHEERFUL	x	GLUM
UNFEELING	x	FEELING

APPENDIX B (continued)

STRESS - NEGATIVE RATING FROM EXPERIMENTER - MEAN SCORE OF 4.47

NAME Kent

WARM	x	COLD
BAD	x	GOOD
FRIENDLY	x	UNFRIENDLY
DEPENDENT	x	INDEPENDENT
SOCIABLE	x	UNSOCIABLE
QUARRELSOME	x	CONGENIAL
GRATEFUL	x	UNGRATEFUL
STUPID	x	INTELLIGENT
LAZY	x	DILIGENT
AFFECTIONATE	x	HATEFUL
DISCONTENTED	x	CONTENTED
CHEERFUL	x	GLUM
UNFEELING	x	FEELING

APPENDIX B (continued)

STRESS - NEGATIVE RATING FROM EXPERIMENTER - MEAN SCORE OF 5.53

	NAME	Kent	
WARM		x	COLD
BAD		x	GOOD
FRIENDLY		x	UNFRIENDLY
DEPENDENT		x	INDEPENDENT
SOCIABLE		x	UNSOCIABLE
QUARRELSOME		x	CONGENIAL
GRATEFUL		x	UNGRATEFUL
STUPID		x	INTELLIGENT
LAZY		x	DILIGENT
AFFECTIONATE		x	HATEFUL
DISCONTENTED		x	CONTENTED
CHEERFUL		x	GLUM
UNFEELING		x	FEELING

APPENDIX C

LOW AGGRESSIVE CUE VALUE PARAGRAPH - FAVORABLE IMPRESSION

I am a first year University student. I wanted to go to an Eastern University but I wasn't accepted, so I came here, and I like it very much. People here are friendly and worldly. Edmontonians seem to know what's going on in the rest of the world. I'm sure everyone must read the newspapers. I certainly intend to stay here next year if I'm still acceptable.

APPENDIX C (continued)

HIGH AGGRESSIVE CUE VALUE PARAGRAPH - UNFAVORABLE IMPRESSION

I am a first year University student. I wanted to go to an Eastern University but I wasn't accepted, so I came here, and I don't like it. People here are unfriendly and provincial. Edmontonians don't seem to know what's going on in the rest of the world. Do you read the newspapers? I certainly don't intend to stay here next year if I can help it.

APPENDIX D

ANTI-SEMITISM SCALE ITEMS

1. Anyone who employs many people should be careful not to hire a large percentage of Jews.
2. One trouble with Jewish businessmen is that they stick together and connive, so that a Gentile doesn't have a fair chance in competition.
3. The Jewish districts in most cities are results of the clannishness and stick-togetherness of Jews.
4. Persecution of the Jews would be largely eliminated if the Jews would make really sincere efforts to rid themselves of their harmful and offensive faults.
5. I can hardly imagine myself marrying a Jew.
6. Jewish leaders should encourage Jews to be more inconspicuous, and to keep out of professions and activities already overcrowded with Jews, and to keep out of the public notice.
7. The trouble with letting Jews into a nice neighborhood is that they gradually give it a typical Jewish atmosphere.
8. No matter how Canadian a Jew may seem to be, there is always something different and strange, something basically Jewish underneath.
9. There may be a few exceptions, but in general, Jews are pretty much alike.
10. There are too many Jews in the various agencies and bureaus in Ottawa and they have too much control over our national policies.

CALIFORNIA F SCALE ITEMS

1. Obedience and respect for authority are the most important virtues children should learn.
2. Science has its place, but there are many important things that can never possibly be understood by the human mind.
3. A person who has bad manners, habits and breeding can hardly expect to get along with decent people.
4. When a person has a problem or worry, it is best for him not to think about it, but to keep busy with more cheerful things.
5. Every person should have complete faith in some supernatural power whose decisions he obeys without question.
6. No weakness or difficulty can hold us back if we have enough will power.
7. Human nature being what it is, there will always be war and conflict.
8. Nowadays when so many different kinds of people move around and mix together so much, a person has to protect himself especially carefully against catching an infection or disease from them.
9. If people would talk less and work more, everybody would be better off.
10. Young people get rebellious ideas sometimes, but as they grow up they ought to get over them and settle down.
11. What the youth needs most is strict discipline, rugged determination, and the will to work and fight for family and country.
12. Nowadays more and more people are prying into matters that should remain personal and private.
13. Some people are born with the urge to jump from high places.
14. An insult to our honor should always be punished.
15. Familiarity breeds contempt.
16. Wars and social troubles may some day be ended by an earthquake or flood that will destroy the whole world.

APPENDIX D (continued)

17. Sex crimes, such as rape and attacks on children, deserve more than mere imprisonment; such criminals ought to be publicly whipped or worse.
18. The businessman and the manufacturer are much more important to society than the artist and the professor.
19. What this country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith.
20. There is hardly anything lower than a person who does not feel great love, gratitude and respect for his parents.
21. People can be divided into two classes: the weak and the strong.
22. The wild sex life of the old Greeks and Romans was tame compared to some of the goings-on in this country, even in places where people might least expect it.
23. Homosexuals are hardly better than criminals and ought to be severely punished.
24. No sane, normal, decent person could ever think of hurting a close friend or relative.
25. Most of our social problems would be solved if we could somehow get rid of the immoral, crooked and feeble-minded.
26. Some day it will probably be shown that astrology can explain a lot of things.
27. Most people don't realize how much our lives are controlled by plots hatched in secret places.
28. Nobody ever learned anything really important except through suffering.

APPENDIX E

RAW DATA - - TOTAL SCORES OVER A 13-ADJECTIVE RATING SCALE

No Stress		Stress	
	Low Aggressive Cue Value	High Aggressive Cue Value	
Low Prejudice	46	53	42
	41	44	39
	44	48	48
	52	52	44
	43	61	31
	40	62	39
	43	48	46
	40	50	42
Moderate Prejudice	31	61	42
	45	35	39
	34	59	29
	27	54	28
	32	53	38
	29	48	26
	40	35	31
	45	63	42
High Prejudice	43	49	62
	49	63	42
	27	54	32
	39	58	52
	48	48	78
	46	50	47
	44	56	40
	56	48	56

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